

CLAIMS

1. A method of managing processor execution time in a motor controller, the method comprising:

receiving motor speed data;

5 comparing the received motor speed data to predetermined motor speed ranges;

determining a motor speed range based on the comparison; and

modulating an inverter switching frequency of a motor controller processor based on the determined motor speed range. 2. The method of

claim 1, wherein receiving the motor speed data comprises:

10 receiving machine terminal information;

processing the received machine terminal information; and

determining motor speed data based on the processed machine terminal information.

3. The method of claim 2, wherein the machine terminal information is selected from the group consisting of: machine terminal current and machine terminal voltage.

4. The method of claim 2, wherein processing the received information utilizes a method selected from the group consisting of: back electromotive force method and high frequency injection method.

5. The method of claim 1, wherein the predetermined motor speed ranges are manufacturer determined motor speed ranges.

6. The method of claim 1, wherein modulating the inverter switching frequency of the motor control processor comprises:

determining a modified inverter switching frequency value based on the determined motor speed range; and

5 providing the modified inverter switching frequency value to a processor control algorithm;

wherein the processor control algorithm modifies the inverter switching frequency based on the modified inverter switching frequency value.

7. The method of claim 6, wherein the processor control algorithm is selected from the group consisting of: an operating system and a BIOS.

8. The method of claim 6, further comprising:

providing a first inverter switching frequency when the received motor speed data is within a first motor speed range;

5 providing a variable inverter switching frequency when the received motor speed data is within a second motor speed range; and

providing a second inverter switching frequency when the received motor speed data is within a second motor speed range.

9. A computer readable medium storing a computer program comprising:

computer readable code for comparing received motor speed data to predetermined motor speed ranges;

5 computer readable code for determining a motor speed range based on the comparison; and

computer readable code for modulating an inverter switching frequency of the motor control processor based on the determined motor speed range.

10. The computer readable medium of claim 9, wherein the computer readable code for receiving the motor speed data comprises:

computer readable code for processing received machine terminal information; and

5 computer readable code for determining motor speed data based on the processed information.

11. The computer readable medium of claim 10, wherein the machine terminal information is selected from the group consisting of: machine terminal current and machine terminal voltage.

12. The computer readable medium of claim 10, wherein the computer readable code for processing the received machine terminal information utilizes a method selected from the group consisting of: back electromotive force method and high frequency injection method.

13. The computer readable medium of claim 9, wherein the predetermined motor speed ranges are manufacturer determined motor speed ranges.

14. The computer readable medium of claim 9, wherein the computer readable code for modulating inverter switching frequency of the motor control processor comprises:

computer readable code for determining a modified inverter
5 switching frequency value based on the determined motor speed range; and

computer readable code for providing the modified inverter switching frequency value to a processor control algorithm;

wherein the processor control algorithm modifies the inverter switching frequency based on the modified inverter switching frequency value.

15. The computer readable medium of claim 14, wherein the processor control algorithm is selected from the group consisting of: an operating system and a BIOS.

16. The computer readable medium of claim 14, further comprising:

computer readable code for providing a first inverter switching frequency when the received motor speed data is within a first motor speed range;

computer readable code for providing a variable inverter switching frequency when the received motor speed data is within a second motor speed range; and

computer readable code for providing a second inverter switching frequency when the received motor speed data is within a second motor speed range.

17. A system for managing processor execution time in a motor controller, the system comprising:

means for receiving motor speed data;

means for comparing the received motor speed data to predetermined motor speed ranges;

for determining a motor speed range based on the comparison;

and

means for modulating an inverter switching frequency of the motor control processor based on the determined motor speed range.